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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,211	11/28/2001	Rene Lazecki	P/1336-156	1227

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EXAMINER

SAADAT, CAMERON

ART UNIT PAPER NUMBER

3713

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,211

Applicant(s)

LAZECKI ET AL.

Examiner

Cameron Saadat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/5/2005 has been entered. Claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 112

Claims 1 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not clearly support the claimed feature of, "causing the transmitted impact signal to *define* the first portion of the simulated impact area and a second portion of the simulated impact area which is at least partially outward of the first portion". It appears that the term "define" should be replaced with the term -- *cover* -- since the disclosed transmitted impact signal does not define two separate impact areas. Instead, the disclosed transmitted impact signal *envelops* an impact area that includes a first portion that is *defined by the weapon signal* and a second portion not covered by the weapon signal. Claims 2, 4-5, 7-13, and 17-19 are rejected for incorporating the above errors from their respective parent claims by dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 10-13, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson et al. (USPN 6,579,097; hereinafter Sampson) in view of Doerfel et al. (USPN 4,682,953; hereinafter Doerfel).

Regarding claims 1 and 3, Sampson discloses a method and system for simulating the effect of an exploding projectile fired by a weapon in a simulated impact area, the method comprising: the method comprising: emitting a weapon signal toward a target area, wherein the weapon signal defines a first portion of the simulated impact area less than the entire simulated impact area; detecting the weapon signal by a sensor 44 located near the target area; transmitting an impact signal from transmitter 40 operatively linked to the sensor 44 when the weapon signal is sensed by the sensor and causing the transmitted impact signal to cover the first portion of the simulated impact area and a second portion of the simulated impact area which is at least partially outward of the first portion thereby simulating a detonation of a projectile fired by a weapon (See Fig. 2; Col. 5, lines 1-6, 41-64; Col. 6, lines 3-7). Sampson discloses all of the claimed subject matter with the exception of explicitly disclosing that the weapon signal *is emitted from a weapon*. Sampson discloses that the emitted weapon signal is emitted toward sensor 44, wherein the weapon signal represents the detonation of an area effects weapon such as a hand grenade, bomb, artillery shell, or chemical/biological weapon. In addition, Doerfel discloses a method for simulating the effect of an exploding projectile fired by a weapon, including the steps of emitting a weapon signal 28 from a *weapon 12* toward a target area 14 via master station 4; detecting the

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weapon signal by a sensors 30, 32, 34, located near the target area 14; transmitting an impact signal 26 when the weapon signal is sensed by the sensors 30, 32, 34 in order to simulate the effect of indirect fire, such as artillery fire on an impact area (See Col. 5, lines 8-25; Figs. 2-3). Hence, in view of Doerfel, it would have been obvious to one of ordinary skill in the art to modify the transmitted weapon signal described in Sampson, by transmitting the signal *from a weapon*, thereby providing a more realistic simulation, in order to provide a training environment for the purpose of simulating the effect of ammunition fired from an ammunition firing device (See Doerfel, Col. 4, lines 59-63).

Regarding claim 20, Sampson discloses an installation for simulating combat action comprising at least one obstacle 18 (See Fig. 1) in the line of sight of an entire impact area of a projectile, the obstacle having a periphery 38 (See Fig. 2); a device for simulating the effect of exploding projectiles fired by the weapon toward a target area, the device comprising: a sensor 44 being located near the target area and adapted for sensing a weapon signal; a transmitter 40 operatively linked to the sensor 44, wherein the transmitter emits an impact signal to simulate an explosive effect of a projectile when the sensor detects a weapon signal; the device being located at the periphery 38 of the obstacle 18 positioned for allowing simulation of the effect of a weapon fired projectile exploding at the target location near the device (See Fig. 2; Col. 5, lines 1-6, 41-64; Col. 6, lines 3-7). Sampson discloses all of the claimed subject matter with the exception of explicitly disclosing that the weapon signal *is emitted from a weapon*. Sampson discloses that the emitted weapon signal is emitted toward sensor 44, wherein the weapon signal represents the detonation of an area effects weapon such as a hand grenade, bomb, artillery shell, or chemical/biological weapon. In addition, Doerfel discloses a method for simulating the effect of an exploding projectile fired by a weapon, including the steps of emitting a weapon signal 28 from a *weapon 12* toward a target area 14 via master station 4; detecting the weapon signal by a sensors 30, 32, 34, located near the target area 14; transmitting an impact signal 26 when the weapon signal is sensed by the sensors 30, 32, 34 in order to simulate the effect of indirect fire, such as artillery fire on an

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impact area (See Col. 5, lines 8-25; Figs. 2-3). Hence, in view of Doerfel, it would have been obvious to one of ordinary skill in the art to modify the transmitted weapon signal described in Sampson, by transmitting the signal *from a weapon*, thereby providing a more realistic simulation, in order to provide a training environment for the purpose of simulating the effect of ammunition fired from an ammunition firing device (See Doerfel, Col. 4, lines 59-63).

Regarding claim 10, Sampson discloses device, further comprising a weapon signal emitter spaced from the sensor operable to emit a weapon signal toward the sensor 44 (Col. 5, lines 55-58).

Regarding claims 11-13, the combination of Sampson and Doerfel discloses all of the claimed subject matter with the exception of explicitly implementing optical communication between the weapon signal emitter and sensor 44. However, Sampson discloses the feature of transmitting a weapon signal toward a target area wherein the weapon signal communicates with sensor 44 using radio frequency whereby transmitter 40 is then activated to transmit an optical impact signal to simulate the detonation of a weapon; soldiers standing within a simulated impact area detect a kill signal via optical detectors (Col. 4, line 43- Col. 5, line 15). Sampson additionally discloses that the soldiers are equipped with weapons mounted with small arms laser transmitters (Col. 4, lines 1-42). Although Sampson does not explicitly disclose optical communication between the weapon signal emitter and the sensor 44, it would have been obvious to one of ordinary skill in the art to modify the radio frequency communication described in Sampson, by implementing optical communication in order to conform to the multiple integrated laser engagement system (MILES) to simulate firing of weapons (See Col. 1, lines 1-65). In addition, it would have been an obvious matter of design choice as to the type of signal used to activate sensor 44 wherein no stated problem is solved or unexpected result is obtained by prescribing a an optical signal versus a radio frequency signal.

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Regarding claims 17-19, Sampson discloses a device, wherein the sensor is sensitive to high frequency radio signals (as per claim 17), and (as per claims 18-19) the transmitter is adapted to emit an impact signal in the form of a high frequency radio signal (Col. 5, lines 40-44).

Claims 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson et al. (USPN 6,579,097; hereinafter Sampson) in view of Doerfel et al. (USPN 4,682,953; hereinafter Doerfel), further in view of Myllyla et al. (USPN 4,640,514; hereinafter Myllyla).

Regarding claims 8-9, the combination of Sampson and Doerfel discloses all of the claimed subject matter with the exception of explicitly disclosing the feature of providing a reflector for reflecting a portion of the weapon signal back to the signal source. However, Myllyla discloses a weapon simulator that emits a weapon signal toward a target area, wherein reflector 6 reflects a portion of the weapon signal back toward the weapon 1 to indicate that a hit was registered (See Fig. 1). Hence, in view of Myllyla it would have been obvious to one of ordinary skill in the art to modify the target area described in the combination of Sampson and Doerfel, by reflecting a portion of the weapon signal back to the weapon, in order to provide feedback that the target has been hit (See Myllyla, Col. 3, lines 29-41).

Allowable Subject Matter

The indicated allowability of claim 20 is withdrawn in view of the newly discovered reference(s) to Sampson.

Claims 6 and 14-16 are allowed. Claims 2 and 4-5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The following is an examiner's statement of reasons for allowance. Patentability is seen in, although not limited to:

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- Dependent claims 2 and 4 - the combination of elements specifically claimed, including the features of simulating the effect of an exploding projectile fired by a weapon toward a target area, wherein a weapon signal is emitted toward a target area; a sensor determines the trajectory of a weapon signal based on the angle of incidence of the weapon signal on the sensor; transmitting an impact signal to simulate a detonation of a projectile; and modifying the impact signal directionally for approximating the area covered by the impact signal to simulated the impact area of detonation. The closest prior art of record does not teach or fairly suggest this feature in the combination.
- Independent claims 6 and 14 - the combination of elements specifically claimed, including the features of simulating the effect of exploding projectiles fired by a weapon toward a target area, comprising a sensor for sensing a weapon signal from a weapon, wherein a sensor is directionally sensitive for sensing the direction from which a weapon signal is received; and wherein the sensor is linked to a transmitter that emits an impact signal over the impact area of the simulated projectile in a directionally variable range; wherein the sensor senses the weapon signal over a total angular range, the sensor further comprising a plurality of sensor elements, each sensor element covering a sector of the total angular range covered by the sensor to determine the angle of incidence of the weapon signal emitted by the weapon. The closest prior art of record does not teach or fairly suggest this feature in the combination.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Akers et al. (USPN 4,752,226) – disclose a chemical warfare simulator.
- Eldridge (USPN 5,228,854) – discloses a combat training system comprising transmitter/receiver units for communicating ordnance hit information.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron Saadat whose telephone number is (571) 272-4443. The examiner can normally be reached on M-F 9:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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XUAN M. THAI
SUPERVISORY PATENT EXAMINER

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